IN THE CLAIMS

10. (Amended) A high voltage semiconductor device comprising:

a semiconductor substrate, the semiconductor substrate including a plurality of device structures thereon; and

an interconnect on the semiconductor substrate, the interconnect comprising at least one slot provided in the semiconductor substrate and at least one metal within the slot, the at least one metal being of sufficient thickness to carry a high current, wherein the at least one slot is oxidized everywhere except at the bottom of the slot where the interconnect forms a ground.

16. (Amended) A high voltage interconnect on a semiconductor substrate comprising:

at least one slot provided in the semiconductor substrate; and

at least one metal within the slot, the at least one metal being of sufficient thickness to carry a high current, wherein the at least one slot is oxidized everywhere except at the bottom of the slot, and the interconnect forms a very low resistance ground strap.

superior connection from the collector or drain of active devices to the buried layer thus allowing the standard sinker masking and diffusion process to be dropped; while providing a lower Ron (on resistance). The method provides direct contact of the metal grounding to the substrate lowering the Ron of active devices and lowering ground noise. This grounded, oxide isolated buried power bus provides ground isolated epitaxial islands of active and passive elements that need to be circuit isolated from each other. All of these advantages come with reduced masking steps while eliminating long high temperature processes. If the epitaxial layer to be utilized is below a thickness of 6um this approach allows for the buried layer masking and diffusion to be dropped from the process providing an additional cost savings.

IN THE CLAIMS

10. (Amended) A high voltage semiconductor device comprising:

a semiconductor substrate, the semiconductor substrate including a plurality of device structures thereon; and

an interconnect on the semiconductor substrate, the interconnect comprising at least one slot provided in the semiconductor substrate and at least one metal within the slot, the at least one metal being of sufficient thickness to carry a high current, wherein the at least one slot is oxidized everywhere except at the bottom of the slot where the interconnect forms a ground.

16. (Amended) A high voltage interconnect on a semiconductor substrate comprising:

at least one slot provided in the semiconductor substrate; and

at least one metal within the slot, the at least one metal being of sufficient

thickness to carry a high current, wherein the at least one slot is oxidized everywhere except at the bottom of the slot, and the interconnect forms a very low resistance ground strap.